PATENT
Docket No. 72425.0105

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	J. Blake Scott	Grp./A.U.: 1755
Appl. No.:	10/037,630	Examiner: Paul D. Marcantoni
Filed:	01/03/02	
Title:	INCORPORATION OF DRILLING CUTTINGS INTO STABLE LOAD-BEARING STRUCTURES	

NEW AND AMENDED APPEAL BRIEF UNDER 37 C.F.R § 41.37

This is a new and amended appeal brief filed in response to Notification of Non-Compliant Appeal Brief mailed on 10/07/2008. This brief is being timely filed within one month or thirty days from the mailing date of the Notification of Non-Compliant Appeal Brief.

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I. Real Party In Interest

The real party in interest in this appeal is the assignee, Scott Environmental Services, Incorporated.

II. Related Appeals and Interferences

There are no related appeals or interferences known to applicants, assignee, or their legal representatives that will affect or be affected by or that have a bearing on this appeal.

III. Status of the Claims

Claims 1-20 (finally rejected and being appealed).

IV. Status of Amendments

There are no un-entered amendments.

V. Summary of Claimed Subject Matter

Claim 1

The subject matter claimed in the only independent claim in this appeal, claim 1, pertains to a process for constructing load-bearing structures incorporating drilling cuttings, said process comprising operations of: (1) forming a particulate mixture comprising drilling cuttings; and (2) at least one of groups (2.1) and (2.2) of suboperations, said group (2.1) comprising suboperations of: (2.1.1) mixing said particulate mixture comprising drilling cuttings with at least one stabilizer selected from the group consisting of: (A) quicklime; (B) hydrated lime; (C) Portland Cement; (D) Class C fly ash; (E) cement kiln dust; (F) lime kiln dust; (G) Class F fly ash; and (H) other pozzolans to form a cementitious second mixture, (2.1.2) forming said cementitious second mixture into the shape and size of the load- bearing structure; and (2.1.3) causing the shaped and sized second mixture formed in suboperation (2.1.2) to undergo a pozzolanic reaction to form said load-bearing structure, said load-bearing structure having sufficient resistance to rutting that any rut formed in such surface by 10,000 applications of a single axle load of 18,000 pounds will have a depth of rutting that is less than 1 inch;

and said group (2.2) comprising suboperations of: (2.2.1) mixing said particulate mixture comprising drilling cuttings with at least one of foamed asphalt and emulsified asphalt to form an asphaltic second mixture; (2.2.2) forming said asphaltic second mixture into the shape and size of the load- bearing structure; and (2.2.3) causing the shaped and sized asphaltic second mixture formed in suboperation (2.2.2) to form the load-bearing structure by curing said shaped asphaltic second mixture, said load-bearing structure having sufficient resistance to rutting that any rut formed in such surface by 10,000 applications of a single axle load of 18,000 pounds will have a depth of rutting that is less than 1 inch. (Page 5, lines 1-30; page 24, line 30 through page 25, line 12 and page 27, lines 3-4 and in the parent United States Patent Application Serial No. 60/311,439 at

page 20, lines 14-19 and page 21, lines 1-2.)

VI. Grounds of Rejection to be Reviewed on Appeal

Whether claims 1-20 are unpatentable under 35 U.S.C. § 103(a) over Polston, United States Patent No. 6,706,108 B2.

VII. Argument

Claims 1- 20 are patentable under 35 U.S.C. § 103(a) over United States Patent No. 6,706,108 B2 (Polston).

A. Claims 1-6 and 8-10.

Throughout the prosecution of the instant application, the Examiner has grouped together all 20 of the pending claims in a common rejection. This is in spite of the fact that claims 11 and 12, for example, contain additional limitations requiring a two stage operation, utilizing fly ash in the first stage and Portland cement in the second stage. Claims 12 - 20 contain limitations for compressive strength and for minimum thickness. The Examiner never addressed these claim limitations nor pointed out why these claims should be considered either obvious or prima facie obvious in view of the Polston reference. Therefore, these claims should not have been rejected on the same basis as claims 1 – 10 as set forth in MPEP 707.07(d) wherein it is stated that:

> *"A plurality of claims should never be grouped together in a common rejection, unless that rejection is equally applicable to all claims in the group."*

One of the bases of the Examiner's obviousness rejection over Polston is that:

> *"[T]he … limitation of 'said load bearing structure having sufficient resistance to rutting that any rut formed in such surface by 10,000 applications of a single axle load of 18,000 pounds will have a depth of rutting that is less than 1 inch' would have been expected property since the prior art contains the same exact components and also mixes to form a load bearing [structure]"…*

The declaration of Dallas Little, of record in this case, serves as a clear rebuttal to the above argument by the Examiner. More specifically, Dr. Little's declaration states that there would have been no such reasonable expectation by a person of ordinary skill in civil engineering as asserted by the Examiner because:

> *"A civil engineer of ordinary skill would realize that achieving the level of resistance to rutting specified by the claims pending in the above-captioned and titled application requires considerably more than simply that "the prior art contains the same components and also mixes to form a load-bearing structure", as the examiner has presumed. In fact, achieving this level of rutting or plastic deformation resistance in the road would be reasonably expected by a civil engineer of ordinary skill only if and when critical material properties related to the rutting resistance of a representative sample of the entire road structure to be built have been determined by laboratory testing and the rutting (or plastic deformation) rate and/or magnitude has been reliably estimated by well-established and empirically derived correlations between pavement properties and observed practice . The properties related to rutting potential include at least:*
> *(1.1) the resilient moduli of all the layer(s) in the road that are above the natural earth subgrade and the resilient modulus of the natural subgrade itself, (1.2) the thickness(es) of the layer(s), and (1.3) the compressive strengths of the layers as well as that of the natural earth subgrade.*
>
> *… However,* ***the Polston reference*** *does not give any experimental data on rutting or plastic deformation resistance directly or method to assess such deformation, and this reference also does not give any experimental data on any of the three properties noted … above. This reference therefore* ***can not give a civil engineer of ordinary skill any reasonable expectation that the rutting or plastic deformation resistance required by the pending claims can be achieved by following the teachings of this reference.*****"** (emphasis added).

In his response to the declaration of Dallas Little, the Examiner stated that *"Also, there is no direct statement by Mr. Little that Polston would <u>not</u> achieve the load bearing and rutting resistance of applicants' claimed invention."* Applicants respectfully submit that the correct legal standard as prescribed by authority is not whether it is impossible to achieve the result claimed within the scope of the teaching of the reference, but whether a person of ordinary skill would have a <u>reasonable expectation</u> of achieving the result claimed by following the teachings of the reference. "'Reasonable expectation of success is the standard with which obviousness is determined.' *Hodosh v. Block Drug Co., Inc.*, 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986). 'The teaching or suggestion to make the claimed combination **and the reasonable expectation of success**

must both be found in the prior art, not in applicant's disclosure.' *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991)." MPEP 2143.

The Examiner has also taken the position that the claim limitation that *"said load-bearing structure having sufficient resistance to rutting that any rut formed in such surface by 10,000 applications of a single axle load of 18,000 pounds will have a depth of rutting that is less than 1 inch*" would have been an expected property since the prior art contains the same exact components and also mixes to form a load bearing structure. Thus, the Examiner apparently believed that the above claim limitation would be inherent in the process taught by Polston and that such an alleged inherent property would have been obvious at the time the instantly claimed invention was made. However, the Examiner has offered no evidence of any supporting teaching in Polston or in the prior art in general of this allegation. Applicants respectfully submit that the Examiner appears to have employed the principles of anticipation based inherency in making the obviousness rejections. However, this has been determined to be improper because it has been held that that which may be inherent is not necessarily known and that obviousness cannot be predicated on what is unknown. *In re Spormann*, 150 USPQ 449, 452 (C.C.P.A. 1966). Furthermore, "It is never appropriate to rely solely on "common knowledge" in the art without evidentiary support in the record, as the principal evidence upon which a rejection was based. *Zurko*, 258 F.3d at 1385, 59 USPQ2d at 1697 … As the court held in *Zurko*, an assessment of basic knowledge and common sense that is not based on any evidence in the record lacks substantial evidence support. *Id.* at 1385, 59 USPQ2d at 1697. See also *In re Lee*, 277 F.3d 1338, 1344-45, 61 USPQ2d 1430, 1434-35 (Fed. Cir. 2002) (In reversing the Board's decision, the court stated "'common knowledge and common sense' on which the Board relied in rejecting Lee's application are not the specialized knowledge and expertise contemplated by the Administrative Procedure Act." MPEP 2144.03.

The Examiner contended that the Applicants have argued *"……the resistance to rutting but have not provided experimental evidence that the prior art would not also resist rutting"*. Applicants in fact have presented evidence that

not every structure made by mixing ingredients as taught by Polston and forming a load bearing structure has the rutting resistance claimed. This evidence is in the specification itself: Page 25 line 28 teaches that a continuous non-particulate product made as described in the specification will be within the scope of pending claim 1 when it has an unconfined compressive strength (hereinafter usually abbreviated as “UCS”) of at least 100 psi when used in the thickneses specified for various substrates. By implication, then, any product with a compressive strength well below this could not be reasonably expected to be satisfactory, unless specific measurements have been made on the material in question, as noted in the specification at page 27 lines 8-11.

In the example in the specification, all of the following have UCS values well below 100 psi: on page 29, all three values in the last line of Table 4; on page 31, the two rightmost values in the last line of Table 6; on page 34 in Table 9, the first and third values in the first line and the rightmost value in the last line of Example 3; on page 35 in Table 9, the two rightmost values in the first line and all three values in the last line of Example 5, all the values in Example 6 except for the first and third values on the "7 % Cement only" line, the two rightmost values in the first line and the single rightmost value in the last line of Example 7, the two rightmost values in the first line and the single rightmost values in the second and last lines of Example 8 last column value of the second line of Example 3 and the last column value of the first line in Example 4; on page 35 in Table 9, the two rightmost columns of the first and last lines of Example 5, every value in Example 6 except the last column value in its third line; the values in the two rightmost columns of the first line and the single rightmost column of the last line of Example 7, the values in the two rightmost columns of the first and last lines and the single rightmost column of Example 8, and the two rightmost columns in the first line of Example 9; and on page 38 in Table 12, the two rightmost values in the first line and the single rightmost values in the third and last lines of Example 10, and the single rightmost values in the last line of Example 13 and the first lines of Examples 14 and 15. All of these examples are prepared by mixing some specific materials as taught by Polston and forming a

load bearing structure, but the particular examples cited immediately above could not be reasonably expected to meet the claim limitation for rutting resistance because of their relatively low values for unconfined compressive strength. The examples with UCS values at or above 100 psi will meet the claim limitation for rutting resistance when supported by the type and thickness of subgrade shown in Table 2. These data show that selections of specific materials in specific proportions are required to meet the rutting resistance limitations in pending claim 1. Applicants further note that the examiner has not cited and the applicants have not found in the Polston reference any quantitative statement whatever about the unconfined compressive strength, flexural modulus, or thickness of any structure that might be made using a composition produced according to the teachings of the Polston reference.

In the "Reply to Applicants' Arguments" on page 3 of the final rejection of 04/06/2006, the Examiner stated that *"[A] road base is a load bearing structure and also part of the makeup of a road. … The applicants also focus their arguments on the 'road base' of Polston versus their 'road'. In response, applicants' claims do not have the limitation of road so it can read upon road base as well."*

Applicants submit that the term "road base" as used by Polston is not the same as the term "load bearing structure" used in the instant claims and that the difference would be so understood by one of ordinary skill in the art of civil engineering upon reading the Polston reference. Polston uses the term "road base" as a short form for "road base material" or "road base composition". Understanding this requires careful reading of the Polston reference, but is believed to be unavoidable after such reading, for the reasons set forth further below.

Polston uses terms with varying words and varying numbers of words to describe the product manufactured by its claimed process. In the relatively short length of its Abstract, Polston uses (in order) "grade road base material", "road base material", and then simply "road base" twice, with no indication that the two word term "road base" is intended to mean anything different from "road base

material". In specification column 1 lines 10 – 11 and line 14, Polston uses "road base" but then uses "roadbed base material" in line 18. The phrase "roadbed base material" in line 18 is preceded by the word "the", meaning that it should have an antecedent, but the next previous phrase preceded by the word "a" that could be a reasonable antecedent is "asphalt stabilized road base", not followed by the word "material", in lines 13 – 14. Thus "road base" in lines 13 – 14 is apparently intended to mean the same thing as "roadbed base material" in line 18. In specification column 2, Polston uses "road base material" in line 2 but then uses "road base composition" in line 5 in a manner that makes it appear that the latter quoted phrase means the same thing as the former. At least as early in the text as column 2 lines 48 and 49, the Polston specification begins to use mostly the two word term "road base", but there is no evidence that Polston intends this two word term in most contexts to be taken to mean anything different from "road base composition" or "road base material" as used earlier. A particularly pertinent part of the specification to support this conclusion is a sentence beginning in column 3 line 26: "The manufactured road base typically is mixed, processed, and likewise *stored* [italics added] surrounded by an earthen berm and on a cement pad and/or other physical barrier that will prevent leaching of liquid contaminants into the soil." In contrast, roads and "road bases" as the latter term is usually used in the civil engineering art[1] are *necessarily* constructed in place, not "typically … stored".

One exception to the normal use, in the latter part of the Polston specification, of the two word phrase "road base" as a short form of the three word phrase "road base composition" or "road base material" occurs at column 4 lines 38 – 42, which in pertinent part reads as follows: "The result of the novel process is to provide a novel road base composition which is made up of treated oil and gas waste material and an aggregate and to apply such composition to a

[1] For example, see the first sentence of U.S. Patent 4,373,958: "This invention relates to ***road base*** stabilization and more particularly to bases for highways, airport runways or the like, which bases will subsequently be covered with a wearing surface such as asphalt concrete or other suitable wearing surface. "

road base location." In this sentence the second use of "road base" appears simply to specify a particular "location", the word following "road base". This corresponds to the more normal use of "road base" in the civil engineering art, *i.e.* something ready to be covered with a surfaced layer to form a useful road. This clearly indicates that the result of the processes taught and claimed by Polston is a composition or material, which does not become a "road base" as the term is normally used in the art until the composition is applied at some particular location.[1] For a further authoritative explanation of the normal meaning of the term "road base" in civil engineering, please see section 8(2) of the Declaration under 37 CFR 1.132 by Dr. Little, already of record in the application.

In view of the above, the limitations in claim 1 of *"*(2.1.2) forming said cementitious second mixture into the shape and size of the load- bearing structure" and *"(2.2.2) forming said asphaltic second mixture into the shape and size of the load- bearing structure; and (2.2.3) causing the shaped and sized asphaltic second mixture formed in suboperation (2.2.2) to form the load-bearing structure by curing said shaped asphaltic second mixture"* is consistent with a "road base" that is formed into its final shape before curing and then cured in place. This is a difference between the teachings of Polston and the instantly claimed process that has never been addressed by the Examiner. It is well settled that differences between the claimed invention and the prior art are inherently relevant to the determination of obviousness. The Supreme Court in *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966), stated: "Under § 103, the scope and content of the prior art are to be determined; differences between the prior art and the claims at issue are to be ascertained; and the level of ordinary skill in the pertinent art resolved. Against this background, the obviousness or nonobviousness of the subject matter is determined." This matter has been further elaborated in MPEP 2141.02 as follows:

> In determining the differences between the prior art and the claims, the question under **35 U.S.C. 103** is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious. *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983); *Schenck v. Nortron Corp.*, 713 F.2d 782, 218 USPQ 698 (Fed. Cir. 1983) (Claims were directed to a vibratory testing machine (a hard-bearing wheel balancer) comprising a

> holding structure, a base structure, and a supporting means which form "a single integral and gaplessly continuous piece." *Nortron* argued the invention is just making integral what had been made in four bolted pieces, improperly limiting the focus to a structural difference from the prior art and failing to consider the invention as a whole. The prior art perceived a need for mechanisms to dampen resonance, whereas the inventor eliminated the need for dampening via the one-piece gapless support structure. "Because that insight was contrary to the understandings and expectations of the art, the structure effectuating it would not have been obvious to those skilled in the art." 713 F.2d at 785, 218 USPQ at 700 (citations omitted).).
> See also *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) (Claims were directed to a three step process for preparing sweetened foods and drinks. The first two steps were directed to a process of producing high purity maltose (the sweetener), and the third was directed to adding the maltose to foods and drinks. The parties agreed that the first two steps were unobvious but formed a known product and the third step was obvious. The Solicitor argued the preamble was directed to a process for preparing foods and drinks sweetened mildly and thus the specific method of making the high purity maltose (the first two steps in the claimed process) should not be given weight, analogizing with product-by-process claims. The court held "due to the admitted unobviousness of the first two steps of the claimed combination of steps, the subject matter as a whole would not have been obvious to one of ordinary skill in the art at the time the invention was made." 535 F.2d at 69, 190 USPQ at 17 (emphasis in original). The preamble only recited the purpose of the process and did not limit the body of the claim. Therefore, the claimed process was a three step process, not the product formed by two steps of the process or the third step of using that product.)

Another aspect of the rejection of the instant claims is the Examiner's statement that*: "[O]verlapping ranges of amounts of the same components in the applicants' process renders their claim prima facie obvious to one of ordinary skill in the art."* Applicants assume that the Examiner's understanding of the term "overlapping ranges" is the same as that described in MPEP 2144.05. In that case, Applicants respectfully submit that the rejection is not proper because under that MPEP section, the claimed ranges must overlap or lie inside **ranges disclosed by the prior art.** The only ranges in pending claim 1 are the lower bounded range concerning the number of at least ten thousand repetitions of a design load that the load bearing structure made can resist without rutting to a depth of more than 1 inch, "more than 1 inch" itself being the other range. It is not seen how these can conceivably overlap with any range in the Polston reference,

because the Examiner has not cited and the applicants have not found any mention of any quantitative rutting characteristics at all in Polston.

B. Claim 7.

Claim 7 is directly dependent upon claim 5 and indirectly dependent upon claim 1. Claim 7 recites the limitation that the ratio of the amount of Class C fly ash used as a stabilizer to the amount of Portland Cement used as a stabilizer is at least 0.50:1.0 but is not more than 10:1.0. The Examiner never addressed the recited ratio limitation in claim 7 in making the rejection over the teachings of Polston. Applicants submit that Polston does not teach or suggest any particular ratio of the amount of fly ash to the amount of Portland Cement as being advantageous. Specifically, the only teaching concerning combinations containing fly ash and cement in general occurs at column 2, lines 45- with the disclosure that :

> "*Hydration and mixing of the treated oil and gas waste material and aggregate along with a binder such as cement, fly ash, lime, kiln dust or the like, will achieve an irreversible pozzolanic chemical reaction necessary for a road base.* "

The Examiner never addressed the recited ratio limitation in claim 7 in making the rejection over the teachings of Polston. Furthermore, the Examiner never put forth any reason why one of ordinary skill in the art would be motivated to modify the teachings of Polston in the manner claimed in claim 7 as required by law. It is clear in the law that when obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference. See *B.F. Goodrich Co. v. Aircraft Braking Sys. Corp*., 72 F.3d 1577, 1582, 37 U.S.P.Q.2D (BNA) 1314, 1318 (Fed. Cir. 1996).

C. Claim 11.

Claim 11 is directly dependent upon claim 10 and indirectly dependent upon claim 1. Claim 11 recites the combination of (1) a stabilizer comprised of fly ash and Portland Cement and, (2) that suboperation (2.1 .1) is accomplished in

two stages, in the first of which C fly ash is mixed with said particulate mixture comprising drilling cuttings and in the second of which Portland Cement is mixed into the mixture previously formed by mixing fly ash with said particulate mixture comprising drilling cuttings. The Examiner never addressed the recited combination limitation in claim 11 in making the rejection over the teachings of Polston. Applicants submit that Polston does not teach or suggest anything about the combination claimed in claim 11 and, therefore, never put forth any reason why one of ordinary skill in the art would be motivated to modify the teachings of Polston in the manner claimed in claim 11 as required by law. It is clear in the law that when obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference. See *B.F. Goodrich Co. v. Aircraft Braking Sys. Corp*., 72 F.3d 1577, 1582, 37 U.S.P.Q.2D (BNA) 1314, 1318 (Fed. Cir. 1996).

D. Claim 12.

Claim 12 is directly dependent upon claim 11 and indirectly dependent upon claim 1. Claim 11 recites the combination of the features of claims 11 and 1 with the thickness and subgrade strength requirements. The Examiner never addressed the recited combination limitation in claim 12 in making the rejection over the teachings of Polston. Applicants submit that Polston does not teach or suggest anything about the combination claimed in claim 12 and, therefore, never put forth any reason why one of ordinary skill in the art would be motivated to modify the teachings of Polston in the manner claimed in claim 12 as required by law. It is clear in the law that when obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference. See *B.F. Goodrich Co. v. Aircraft Braking Sys. Corp*., 72 F.3d 1577, 1582, 37 U.S.P.Q.2D (BNA) 1314, 1318 (Fed. Cir. 1996).

E. Claim 14.

Claim 14 is directly dependent upon claim 7 and indirectly dependent upon claim 1. Claim 14 recites the combination of the features of claims 7 and 1 with the thickness and subgrade strength requirements. The Examiner never addressed the recited combination limitation in claim 14 in making the rejection over the teachings of Polston. Applicants submit that Polston does not teach or suggest anything about the combination claimed in claim 14 and, therefore, never put forth any reason why one of ordinary skill in the art would be motivated to modify the teachings of Polston in the manner claimed in claim 14 as required by law. It is clear in the law that when obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference. See *B.F. Goodrich Co. v. Aircraft Braking Sys. Corp.*, 72 F.3d 1577, 1582, 37 U.S.P.Q.2D (BNA) 1314, 1318 (Fed. Cir. 1996).

F. Claims 13 and 15-20

Claims 13 and 15-20 contain the same distinguishing limitations from claim 1-6 and 8-10 which are the recited limitations of thickness and resilient modulus. The Examiner never addressed the recited limitations in claims 13 and 15-20 in making the rejection over the teachings of Polston. Applicants submit that Polston does not teach or suggest anything about the combinations claimed in claims 13 and 15-20 and, therefore, never put forth any reason why one of ordinary skill in the art would be motivated to modify the teachings of Polston in the manner claimed in claims 13 and 15-20 as required by law. It is clear in the law that when obviousness is based on a single prior art reference, there must be a showing of a suggestion or motivation to modify the teachings of that reference. See *B.F. Goodrich Co. v. Aircraft Braking Sys. Corp.*, 72 F.3d 1577, 1582, 37 U.S.P.Q.2D (BNA) 1314, 1318 (Fed. Cir. 1996).

CONCLUSION

For the reasons stated above, Applicants respectfully submit the Examiner's final rejection of claims 1-20 should be reversed. Should any fee be due for entry and consideration of this New and Amended Appeal Brief that has not been accounted for, the Commissioner is authorized to charge such fee(s) to Deposit Account No. 160750.

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VIII. CLAIMS APPENDIX

1. A process for constructing load-bearing structures incorporating drilling cuttings, said process comprising operations of:

(1) forming a particulate mixture comprising drilling cuttings; and

(2) at least one of groups (2.1) and (2.2) of suboperations, said group (2.1) comprising suboperations of:

(2.1.1) mixing said particulate mixture comprising drilling cuttings with at least one stabilizer selected from the group consisting of:

(A) quicklime;

(B) hydrated lime;

(C) Portland Cement;

(D) Class C fly ash;

(E) cement kiln dust;

(F) lime kiln dust;

(G) Class F fly ash; and

(H) other pozzolans

to form a cementitious second mixture,

(2.1.2) forming said cementitious second mixture into the shape and size of the load- bearing structure; and

(2.1.3) causing the shaped and sized second mixture formed in suboperation (2.1.2) to undergo a pozzolanic reaction to form said load-bearing structure,

said load-bearing structure having sufficient resistance to rutting that any rut formed in such surface by 10,000 applications of a single axle load of 18,000 pounds will have a depth of rutting that is less than 1 inch;

and said group (2.2) comprising suboperations of: (2.2.1) mixing said particulate mixture comprising drilling cuttings with at least one of foamed asphalt and emulsified asphalt to form an asphaltic second mixture; (2.2.2) forming said asphaltic second mixture into the shape and size of the load- bearing structure; and

(2.2.3) causing the shaped and sized asphaltic second mixture formed in suboperation (2.2.2) to form the load-bearing structure by curing said shaped asphaltic second mixture, said load-bearing structure having sufficient resistance to rutting that any rut formed in such surface by 10,000 applications of a single axle load of 18,000 pounds will have a depth of rutting that is less than 1 inch.

2. A process according to claim 1, wherein at least 10 percent by mass of said particulate mixture are deep drilling cuttings that have been generated by a process comprising the following suboperations:

(1.1) providing drilling means, drilling driving means that cause the drilling means to operate at the bottom of a borehole, and drilling mud; and

(1.2) causing said drilling driving means to drive said drilling means while said drilling mud flows into and out of said borehole through separate passageways disposed so as to insure that mud pumped into the borehole must reach the near vicinity of the drilling means that is deepening, widening, and/or otherwise

increasing the volume of said borehole before the mud can enter any passageway through which a mixture of mud and cuttings flows out of the borehole during drilling, said mixture of mud and cuttings, optionally after removal therefrom of all or part of the constituents of said mixture that are not cuttings, constituting said deep drilling cuttings.

3. A process according to claim 2, wherein at least part of the deep drilling cuttings have been produced by drilling with a water-containing drilling mud.

4. A process according to claim 3, said process comprising group (2.1) of suboperations.

5. A process according to claim 4, wherein said stabilizer is selected from the group consisting of quicklime, hydrated lime, Portland Cement, Class C fly ash, and mixtures of Class C fly ash with Portland Cement.

6. A process according to claim 5, wherein:

— said stabilizer is a mixture of Class C fly ash with Portland Cement; and

— suboperation (2.1.1) is accomplished in two stages, in the first of which Class C fly ash is mixed with said particulate mixture comprising drilling cuttings and in the second of which Portland Cement is mixed into the mixture previously formed by mixing Class C fly ash with said particulate mixture comprising drilling cuttings.

7. A process according to claim 6, wherein, based on the particulate mixture comprising drilling cuttings to be stabilized:

— the amount of Portland Cement used as a stabilizer is at least 1.0%;

— the amount of Class C fly ash used as a stabilizer is at least 2.0%; and

— the ratio of the amount of Class C fly ash used as a stabilizer to the amount of Portland Cement used as a stabilizer is at least 0.50:1.0 but is not more than 10:1.0.

8. A process according to claim 2, wherein at least part of the deep drilling cuttings have been produced by drilling with an oil-containing drilling mud.

9. A process according to claim 8, said process comprising group (2.1) of suboperations.

10. A process according to claim 9, wherein said stabilizer is selected from the group consisting of quicklime, hydrated lime, Portland Cement, Class C fly ash, fluidized bed fly ash, and mixtures of either Class C or fluidized bed fly ash with Portland Cement.

11. A process according to claim 10, wherein:

— said stabilizer is a mixture of Class C or fluidized bed fly ash with Portland Cement; and

— suboperation (2.1 .1) is accomplished in two stages, in the first of which C fly ash is mixed with said particulate mixture comprising drilling cuttings and in the second of which Portland Cement is mixed into the mixture previously formed by mixing fly ash with said particulate mixture comprising drilling cuttings.

12. The process according to claim 11, wherein said load- bearing structure has an unconfined compressive strength of at least 100 psi and has a thickness of:

— at least 8 inches if constructed on a subgrade with a resilient modulus that is at least 15.0 kpsi;

— at least 12 inches if constructed on a subgrade with a resilient modulus that is at least 10.0 kpsi but less than 15.0 kpsi; and

— at least 16 inches if constructed on a subgrade with a resilient modulus that is at least 5.0 kpsi but less than 10.0 kpsi.

13. A process according to claim 10, wherein said load-bearing structure has an unconfined compressive strength of at least 100 psi and has a thickness of:

— at least 8 inches if constructed on a subgrade with a resilient modulus that is at least 15.0 kpsi;

— at least 12 inches if constructed on a subgrade with a resilient modulus that is at least 10.0 kpsi but less than 15.0 kpsi; and

— at least 16 inches if constructed on a subgrade with a resilient modulus that is at least 5.0 kpsi but less than 10.0 kpsi.

14. A process according to claim 7, wherein said load-bearing structure has an unconfined compressive strength of at least 100 psi and has a thickness of: —
at least 8 inches if constructed on a subgrade with a resilient modulus that is at least 15.0 kpsi;
— at least 12 inches if constructed on a subgrade with a resilient modulus that is at least 10.0 kpsi but less than 15.0 kpsi; and
— at least 16 inches if constructed on a subgrade with a resilient modulus that is at least 5.0 kpsi but less than 10.0 kpsi.

15. A process according to claim 6, wherein said load-bearing structure has an unconfined compressive strength of at least 100 psi and has a thickness of:
— at least 8 inches if constructed on a subgrade with a resilient modulus that is at least 15.0 kpsi;
— at least 12 inches if constructed on a subgrade with a resilient modulus that is at least 10.0 kpsi but less than 15.0 kpsi; and
— at least 16 inches if constructed on a subgrade with a resilient modulus that is at least 5.0 kpsi but less than 10.0 kpsi.

16. A process according to claim 5, wherein said load-bearing structure has an unconfined compressive strength of at least 100 psi and has a thickness of:

— at least 8 inches if constructed on a subgrade with a resilient modulus that is at least 15.0 kpsi;

— at least 12 inches if constructed on a subgrade with a resilient modulus that is at least 10.0 kpsi but less than 15.0 kpsi; and

— at least 16 inches if constructed on a subgrade with a resilient modulus that is at least 5.0 kpsi but less than 10.0 kpsi.

17. A process according to claim 4, wherein said load-bearing structure has an unconfined compressive strength of at least 100 psi and has a thickness of:

— at least 8 inches if constructed on a subgrade with a resilient modulus that is at least 15.0 kpsi;

— at least 12 inches if constructed on a subgrade with a resilient modulus that is at least 10.0 kpsi but less than 15.0 kpsi; and

— at least 16 inches if constructed on a subgrade with a resilient modulus that is at least 5.0 kpsi but less than 10.0 kpsi.

18. A process according to claim 3, wherein said load-bearing structure has an unconfined compressive strength of at least 100 psi and has a thickness of:

— at least 8 inches if constructed on a subgrade with a resilient modulus that is at least 15.0 kpsi;

— at least 12 inches if constructed on a subgrade with a resilient modulus that is at least 10.0 kpsi but less than 15.0 kpsi; and

— at least 16 inches if constructed on a subgrade with a resilient modulus that is at least 5.0 kpsi but less than 10.0 kpsi.

19. A process according to claim 2, wherein said load-bearing structure has an unconfined compressive strength of at least 100 psi and has a thickness of:

— at least 8 inches of constructed on a subgrade with a resilient modulus that is at least 15.0 kpsi;

— at least 12 inches if constructed on a subgrade with a resilient modulus that is at least 10.0 kpsi but less than 15.0 kpsi; and

— at least 16 inches if constructed on a subgrade with a resilient modulus that is at least 5.0 kpsi but less than 10.0 kpsi.

20. A process according to claim 1, wherein said load-bearing structure has an unconfined compressive strength of at least 100 psi and has a thickness of:

— at least 8 inches if constructed on a subgrade with a resilient modulus that is at least 15.0 kpsi;

— at least 12 inches if constructed on a subgrade with a resilient modulus that is at least 10.0 kpsi but less than 15.0 kpsi; and

— at least 16 inches if constructed on a subgrade with a resilient modulus that is at least 5.0 kpsi but less than 10.0 kpsi.

IX. EVIDENCE APPENDIX

1. The Declaration of Dallas Little was entered into the record on February 6, 2006.

X. RELATED PROCEEDINGS APPENDIX

There are no relevant judicial or administrative decisions to provide.